2012 ASSESSMENT REPORT

Property Comprising the Following Claims:

K53 and K54 Claims

Located in the:
Keno Hill Area
Mayo Mining District
Yukon Territory, Canada
N.T.S. 105M/14

Latitude: 63.929° N
Longitude: 135.389° W

PREPARED FOR:

Alexco Keno Hill Mining Corp
1150-200 Granville Street
Vancouver, B.C. V6C 1S4

and

PREPARED BY:

Al McOnie

Alexco Resource Corp.
1150-200 Granville St.
Vancouver, B.C. V6C 1S4

DATE WORK PERFORMED: September 11, 2012

DATE OF REPORT: May 26, 2013

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1.0 SUMMARY

During September 2012, twelve soil samples were collected from the K54 Claim on Galena Hill.

Several of the samples contain anomalous concentrations of metals commonly associated with the silver-lead-zinc mineralization found in the Keno Hill mining district and further prospecting is required.

2.0 INTRODUCTION

This report summarizes soil sampling carried out for assessment purposes for Alexco Keno Hill Mining Corp on 11 September 2012 over the K53 – K54 Group of claims. Planning, supervision, implementation and reporting of this work were performed by Alexco Resource Corp. staff.

The soil sampling program was completed over the eastern part of the claim group that is underlain by Earn Group schist just below the lower contact of the Basal Quartzite Member of the Keno Hill Quartzite Formation that is host to most of the silver – lead – zinc mineralization in the Keno Hill district.

3.0 LOCATION AND ACCESS

The quartz claims on which assessment work was conducted are held under the name of Alexco Keno Hill Mining Corp 100%. The property is located in the Keno Hill district, Mayo Mining District approximately 350 km north of Whitehorse (Figure 1). The area is covered by NTS map sheet 105M/14. The reference datum used is UTM NAD83 Zone 8, unless otherwise noted.

Access to the district is via the Silver Trail Highway connecting the villages from Mayo to Elsa and then by vehicle access on the Hector – Calumet mine road up Galena Hill.

The ground lies between 1,135 and 1,205 metres in elevation on the northern slopes of Galena Hill at about the level of tree line, in the area immediately east of the historic Hector – Calumet Mine that produced over 96 million ounces silver.

The base of operations for Alexco is the abandoned company town of Elsa which contains camp and office facilities.

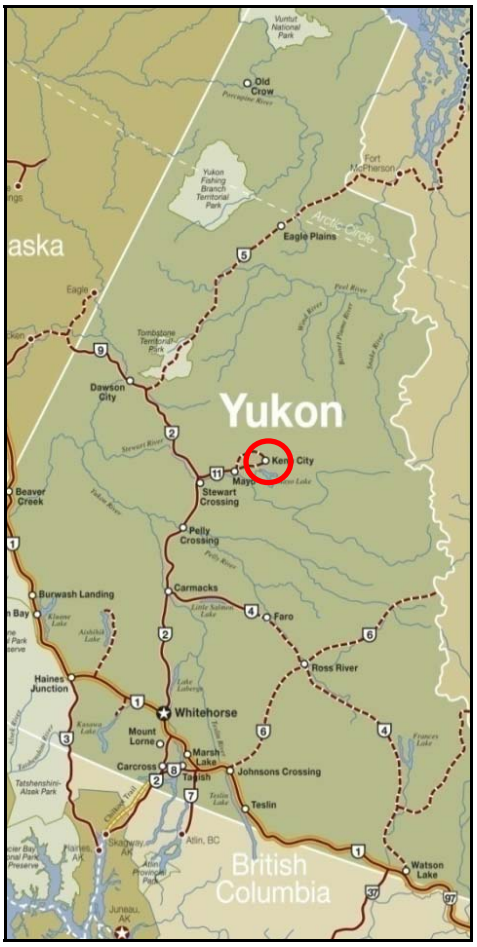
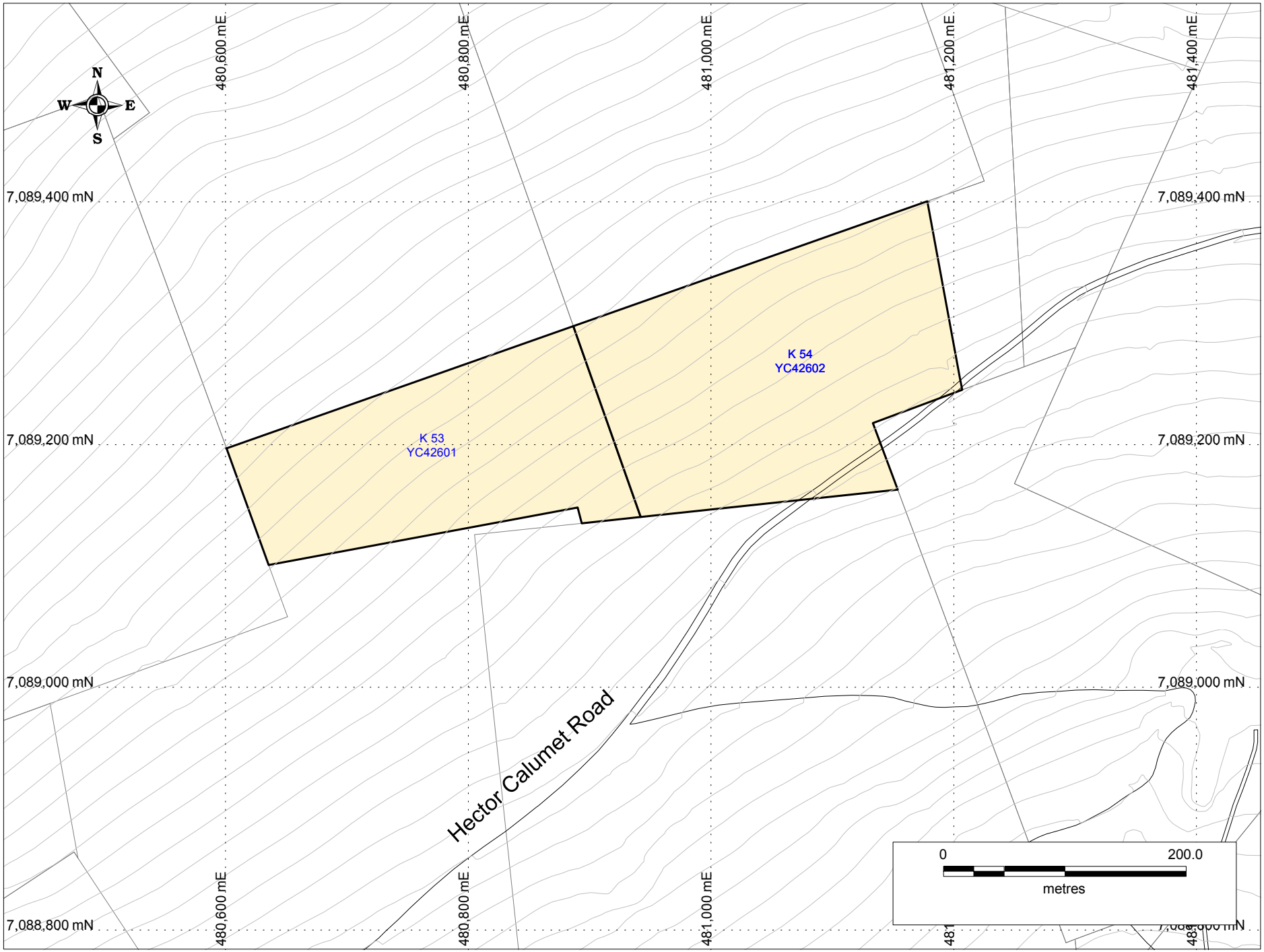


Figure 1 General Location of the Claim Block

4.0 CLAIM STATUS

The K53 and K54 quartz mining claims covered by this report are active having been originally staked in 2005, and prior to the current work had an expiry date in December 2012.

A complete list of claims pertaining to this assessment report is included in Appendix 1. The location of the quartz claims is shown in Figure 2. A list of personnel and cost statement are included as Appendices 2 and 3.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480,800 mE
481,000 mE
481,200 mE
481,400 mE
7,089,400 mN
7,089,200 mN
7,089,000 mN
7,088,800 mN
K 53
YC42601
K 54
YC42602
Hector Calumet Road
0
200.0
metres

5.0 REGIONAL GEOLOGY

The property is situated within the western part of the Selwyn Basin in an area dominated by deformed and metamorphosed sediments accumulated at the edge of the Neoproterozoic to Paleozoic continental margin. During the Jurassic and Cretaceous, the area was subjected to compressional tectonic forces producing imbricate thrust sheets and widespread folding. In the mid-Cretaceous, renewed tectonism resulted in extensive brittle deformation and the emplacement of intrusive plutons.

The rock units within the claim area include the Devonian - Mississippian Earn Group and Triassic greenstone.

6.0 PROPERTY GEOLOGY

The claim block is located on the upper limb of a regional antiformal fold structure. Detailed geological mapping by Alexco has identified the area to be underlain by a chlorite - sericite schist unit just above a graphitic schist unit that contains thin quartzite horizons at the top of the Devonian – Mississippian Earn Group and immediately below the lower contact of the Basal Quartzite Member of the Keno Hill Formation (Figure 3).

The area lies close to the Hector – Calumet and Townsite mine workings and contains a number of historic prospect trenches.

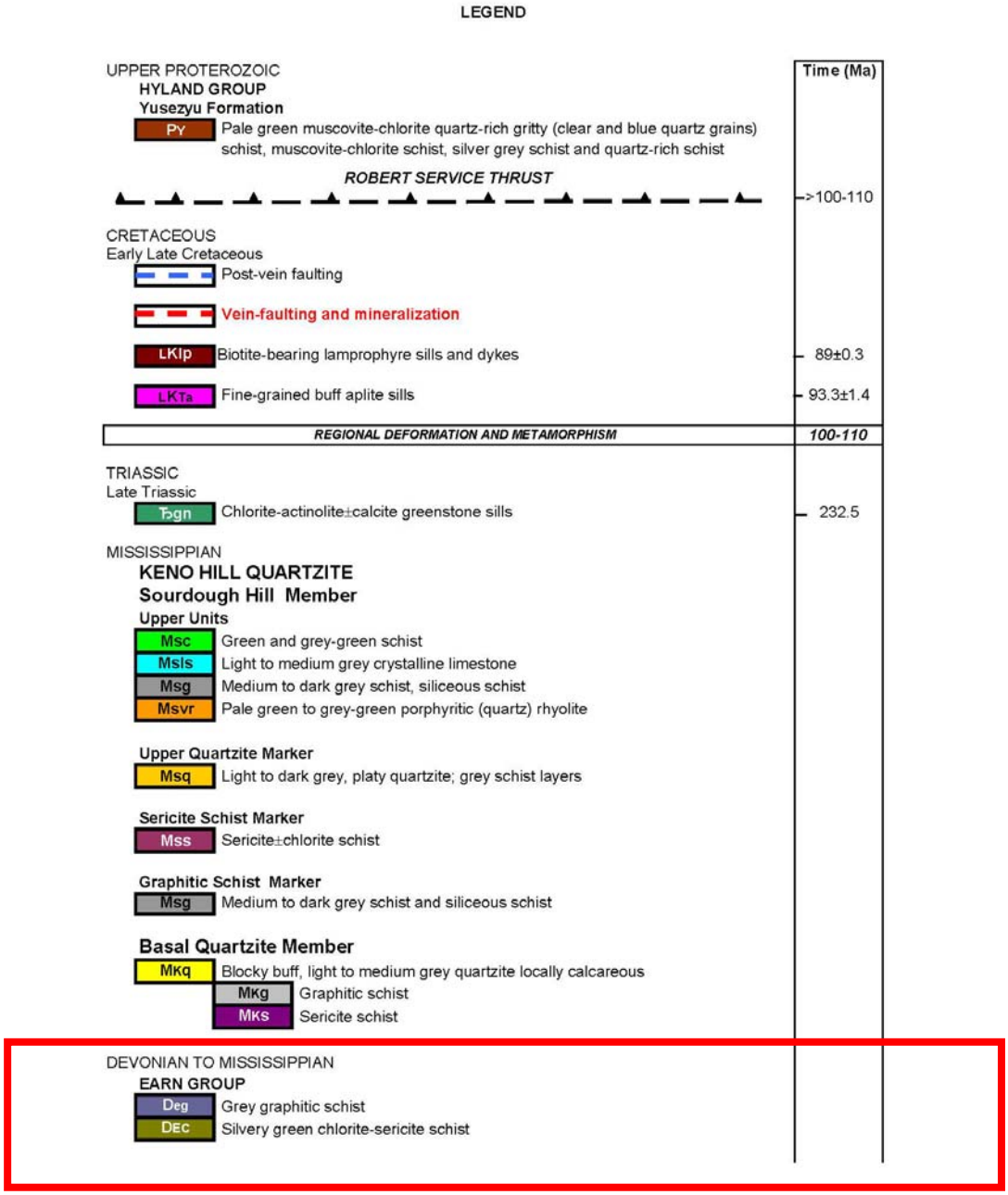


Figure 3 Stratigraphic Position of the K53 and K54 Claims (shown in red, from McOnie and Read, 2010)

7.0 2012 SOIL SAMPLING WORK PROGRAM

During the 2012 field season, a total of twelve soil samples were collected at 25 metre intervals along two north northwest – south southeast lines spaced at 200 metres apart on the K54 claim.

The work was undertaken by Alexco Resource Corp. geologists on 11 September, 2012.

Previously, Alexco had reported the results of a soil sampling program of eighteen widespread samples on the same claims (Anderson et al, 2008). That survey had not identified any anomalous geochemistry.

All soil sample characteristics were recorded in the field and entered into spreadsheets (Appendix 4). Samples were analyzed for 33 elements by four acid ICP-AES method ME-ICP61 with gold also determined by method AA-25 using fire assay and AAS by ALS Minerals Laboratory, North Vancouver, BC and reported 3 October 2012. Copies from the laboratory results (Certificate WH12225640) are included in Appendix 5.

Soil Sampling Results

Within the Keno Hill district, the background values for elements generally associated with mineralization are considered to be as follows:

Ag…… 0.5ppm
Au……. 50ppb
Pb…….. 40ppm
Zn……. 100ppm
Cu……. 35ppm
As…… 50ppm
Sb…… 5ppm

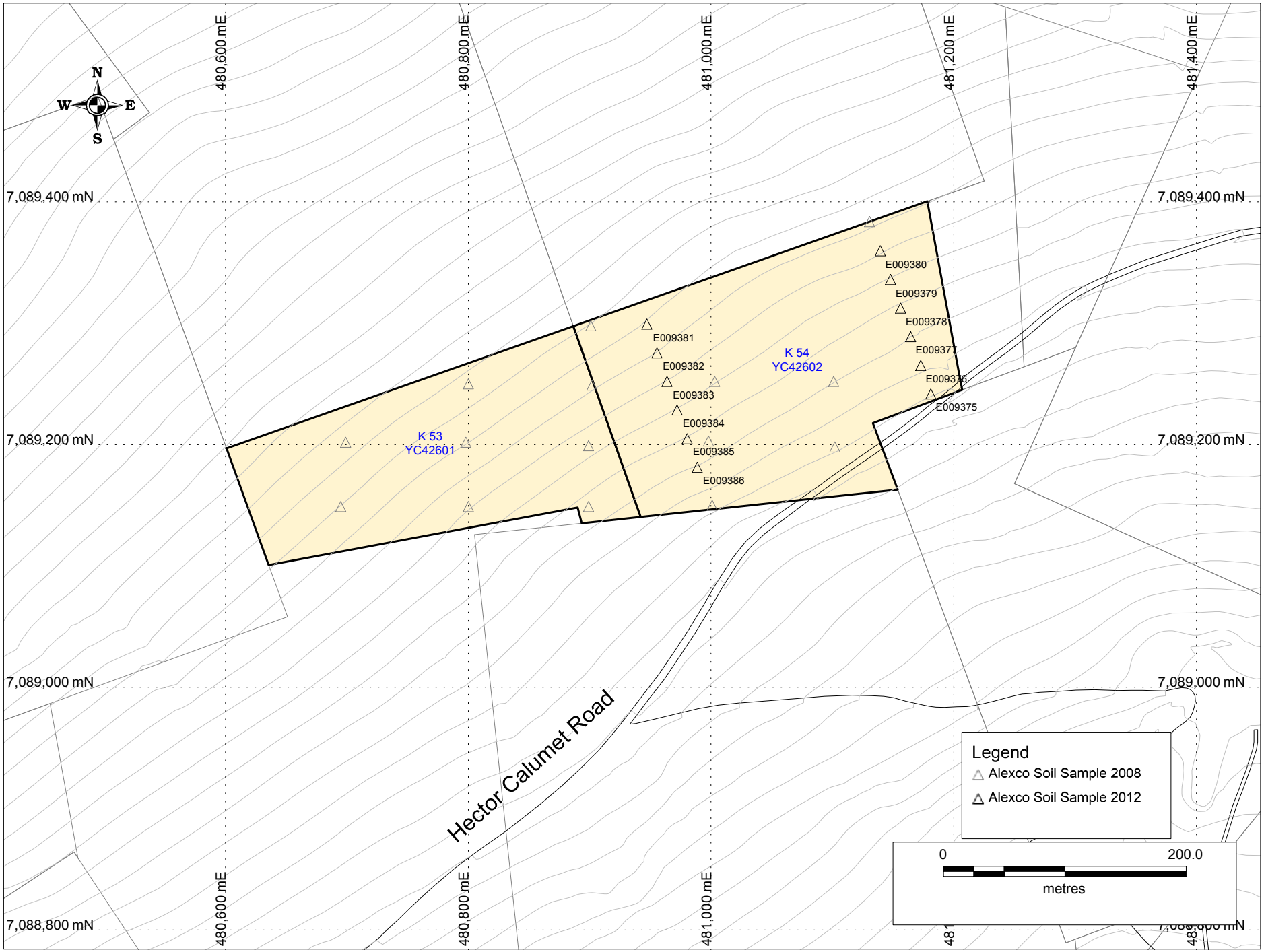
Anomalous values here are considered to exceed twice the background and the range of geochemical values for all samples is shown in Table 1.

A number of anomalous silver - zinc samples occur at the eastern end of the K54 claim and a couple of wider spaced silver anomalies on the K53 claim. These require some follow up investigation.

A map showing the location of soil samples is shown as Figure 5 and those with anomalous silver or zinc values are shown in Figure 6.

Table 1 Range of Geochemical Values from all Alexco Soil Surveys

Element	Min	Max	Mean	Range	SD	Percentile25	Percentile50	Percentile75	Percentile90
Au_ppm	0.01	0.04	0.02	0.03	0.01	0.01	0.01	0.02	0.03
Ag_ppm	0.5	1.4	0.98	0.90	0.35	0.65	1.10	1.25	1.30
Al_%	5.08	6.65	5.83	1.57	0.44	5.51	5.90	6.20	6.36
As_ppm	7	58	21.11	51.00	10.37	16.00	17.00	23.00	31.60
Ba_ppm	990	2390	1442.59	1400.00	399.51	1160.00	1290.00	1700.00	2054.00
Be_ppm	1	1.4	1.15	0.40	0.13	1.00	1.10	1.25	1.30
Ca_%	0.78	1.53	1.06	0.75	0.16	0.97	1.04	1.15	1.22
Cd_ppm	0.5	9.3	2.24	8.80	2.45	1.20	1.60	1.95	3.10
Co_ppm	7	21	11.19	14.00	3.15	9.50	10.00	13.00	14.00
Cr_ppm	61	73	66.93	12.00	3.33	64.50	67.00	69.00	70.80
Cu_ppm	10	46	21.30	36.00	10.45	14.50	19.00	26.50	38.80
Fe_%	2.5	3.65	3.01	1.15	0.30	2.84	2.97	3.19	3.45
Ga_ppm	10	20	10.74	10.00	2.67	10.00	10.00	10.00	10.00
K_%	1.06	1.43	1.25	0.37	0.10	1.16	1.25	1.34	1.36
La_ppm	20	40	31.85	20.00	4.83	30.00	30.00	30.00	40.00
Mg_%	0.61	0.8	0.70	0.19	0.06	0.66	0.69	0.74	0.78
Mn_ppm	289	2650	854.41	2361.00	591.89	410.50	596.00	1132.50	1601.00
Mo_ppm	1	2	1.07	1.00	0.27	1.00	1.00	1.00	1.00
Na_%	0.99	1.19	1.09	0.20	0.06	1.04	1.08	1.14	1.18
Ni_ppm	16	32	22.78	16.00	4.45	20.00	21.00	25.50	30.00
P_ppm	690	1290	939.63	600.00	153.63	840.00	910.00	1030.00	1146.00
Pb_ppm	17	73	27.26	56.00	13.10	20.50	23.00	28.50	34.40
S_%	0.02	0.1	0.05	0.08	0.02	0.04	0.05	0.06	0.07
Sc_ppm	10	14	11.26	4.00	1.02	11.00	11.00	12.00	12.40
Sr_ppm	157	198	182.81	41.00	11.04	176.50	185.00	191.50	195.40
Th_ppm	20	20	20.00	0.00	0.00	20.00	20.00	20.00	20.00
Ti_%	0.35	0.44	0.39	0.09	0.02	0.38	0.39	0.41	0.42
U_ppm	10	10	10.00	0.00	0.00	10.00	10.00	10.00	10.00
V_ppm	103	121	111.15	18.00	5.82	106.00	111.00	117.00	119.00
Zn_ppm	81	575	149.93	494.00	109.01	92.00	108.00	153.50	283.00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K 54
YC42602
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E009379
E009378
E009377
E009376
E009375
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Hector Calumet Road
Legend
Alexco Soil Sample 2008
Alexco Soil Sample 2012
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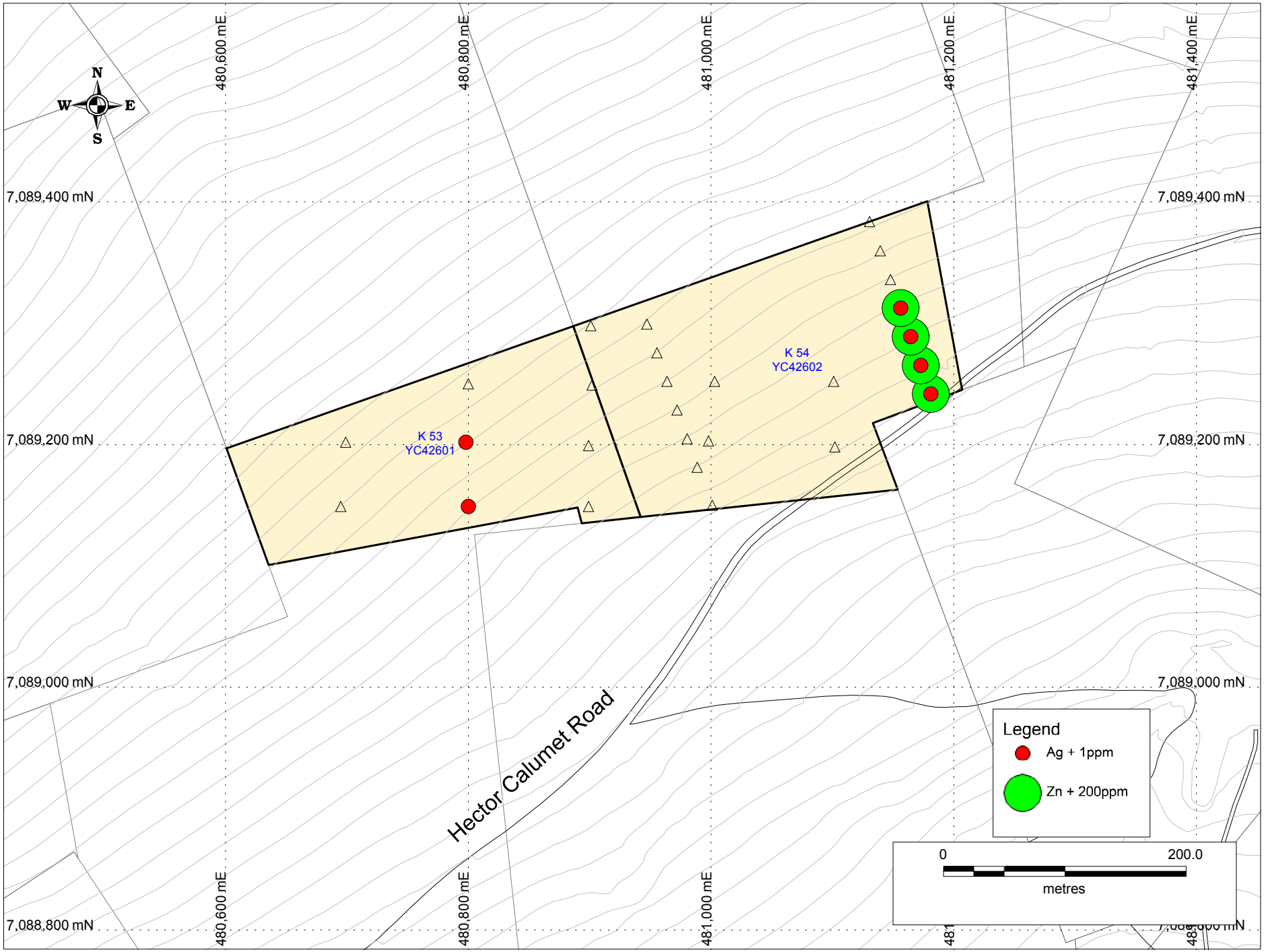
metres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7,089,200 mN
7,089,000 mN
7,088,800 mN
K 53
YC42601
K 54
YC42602
Hector Calumet Road
Legend
Ag + 1ppm
Zn + 200ppm
0
200.0
metres

8.0 CONCLUSIONS AND RECOMMENDATIONS

The results from the soil sampling identify some areas where geochemical anomalies may relate to potentially mineralized structures occurring along strike on the Townsite mineralized vein-fault system. These areas require further exploration.

9.0 LIST OF REFERENCES

Anderson, K,. Lippoth, R,. and Dodd, S. 2008
2008 Geological, Geochemical and XRF Assessment Report on the Keno Hill Property.
Alexco Resource Corp.

McOnie, A., and P.B. Read. 2010.
Stratigraphy, Structure and Exploration Opportunities Sourdough, Galena and part of Keno Hills, Keno Hill Mining Camp, Central Yukon.
Internal Report Alexco Resource Corp.

Murphy, D.C., 1997.
Geology of the McQuesten River Region, Northern McQuesten and Mayo Map Areas, Yukon Territory (11P/14, 15, 16; 105M/13,14).
Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Bulletin 6.

APPENDIX 1

LIST OF CLAIMS

Claim	Quartz Claim	Grant number	Owner	Staking date	Recorded date	Expiry date
K 53	97144216	YC42601	Alexco Keno Hill Mining Corp. - 100%	05/12/2005	05/12/2005	31/12/2012
K 54	97144217	YC42602	Alexco Keno Hill Mining Corp. - 100%	05/12/2005	15/12/2005	15/12/2012

APPENDIX 2

LIST OF PERSONNEL

Al McOnie
694 SH 2, RD1
Katikati
New Zealand
3177

Laura McIntyre
BOX 1044
Marsh Lake, YT
Y0B 1Y1

Dave Slocombe
#306 – 1685 West 13th Ave
Vancouver, BC

APPENDIX 3

STATEMENT OF EXPENDITURES

COST STATEMENT - Alexco Resource Corp. October 2012 "K54 Group" Assessment Filing

Claim(s)	*Grant*	*Owner*	*STAFF REPORTING*	*ROOM AND BOARD*	*ANALYTICAL*	*RENTALS / SUPPPORT*	**EST TOTAL**
K 54	YC42602	Alexco Keno Hill Mining Corp.	$ 676.00	$ 228.00	$ 504.00	$ 75.00	$ 1,483.00
		*Rentals/Support includes communication, freight, travel, fuel, truck & field office rental					
		Geochemical Soil Sampling work carried out on September 11, 2012					

APPENDIX 4

2012 SOIL SAMPLE DESCRIPTIONS

Sample	East	North	Depth cm	Horizon	Color	Silt %	Clay %	Organic %	Gravel %	Sand %	Date Sampled
E009375	481181	7089242	20	A/B	Brown	50	20	2	0	15	11/09/2012
E009376	481173	7089265	35	B	Brown	40	20	2	0	25	11/09/2012
E009377	481164	7089289	35	B	Brown	40	20	2	0	30	11/09/2012
E009378	481156	7089312	40	B	Light brown	30	30	1	5	20	11/09/2012
E009379	481148	7089336	20	B	brown	30	40	1	2	20	11/09/2012
E009380	481139	7089360	25	B	brown	40	25	2	2	15	11/09/2012
E009381	480947	7089299	20	B	Grey / Brown	30	50	1	0	5	11/09/2012
E009382	480955	7089276	10	B	Brown	40	20	1	10	15	11/09/2012
E009383	480964	7089252	20	B	Brown	30	40	2	7	20	11/09/2012
E009384	480972	7089228	20	B	Brown	40	30	3	5	20	11/09/2012
E009385	480980	7089205	30	A	Red / Brown	20	0	10	0	60	11/09/2012
E009386	480989	7089181	35	A/B	Red / Brown	30	20	10	0	30	11/09/2012

APPENDIX 5

SOIL SAMPLE ANALYSES

SAMPLE	Au (ppm)	Ag (ppm)	Al (%)	As (ppm)	Ba (ppm)	Be (ppm)	Bi (ppm)	Ca (%)	Cd (ppm)	Co (ppm)	Cr (ppm)	Cu (ppm)	Fe (%)	Ga (ppm)	K (%)	La (ppm)	Mg (%)	Mn (ppm)
E009375	-0.01	1.3	6.65	24	2160	1.3	-2	0.96	9.3	18	73	38	3.59	10	1.32	30	0.77	2650
E009376	-0.01	1.2	6.29	28	1860	1.2	-2	1.01	1.8	10	69	27	2.9	10	1.3	30	0.72	596
E009377	-0.01	1.3	6.37	58	2390	1.3	-2	1.2	2.1	10	72	40	3.3	10	1.34	30	0.74	1360
E009378	-0.01	1.1	5.91	43	2150	1.3	-2	1.24	3.1	11	69	26	3.36	10	1.27	40	0.72	912
E009379	-0.01	0.5	5.55	37	1710	1.3	-2	1.07	1.6	14	68	21	2.85	10	1.25	30	0.66	1360
E009380	-0.01	-0.5	5.88	18	1680	1.1	-2	1.07	1.2	10	66	21	2.73	10	1.19	30	0.7	690
E009381	-0.01	-0.5	6.36	17	1270	1.2	-2	1.04	-0.5	11	67	14	2.97	10	1.34	30	0.76	355
E009382	-0.01	-0.5	5.9	15	1190	1.2	-2	1.03	-0.5	10	66	15	3.02	10	1.28	30	0.73	392
E009383	-0.01	-0.5	6.38	17	1370	1.3	-2	1.06	-0.5	10	70	20	3.2	10	1.4	40	0.79	395
E009384	-0.01	-0.5	6.16	18	1290	1.1	-2	1.02	-0.5	10	61	15	2.92	10	1.34	30	0.74	554
E009385	-0.01	-0.5	6	17	1290	1.1	-2	0.94	-0.5	13	67	15	2.98	10	1.3	30	0.69	665
E009386	-0.01	-0.5	5.92	10	1270	1.1	-2	0.91	-0.5	7	62	18	2.5	10	1.33	30	0.67	289
0695-9149	-0.01	-0.5	5.1	20	1090	1	-2	1.53	-0.5	9	66	12	2.64	10	1.06	40	0.62	486
0699-9202	0.01	0.5	5.58	15	1330	1	-2	1.42	-0.5	10	68	10	2.83	10	1.12	30	0.66	524
0798-9202	0.02	1.2	5.57	23	1260	1.2	-2	0.88	-0.5	9	69	19	3.01	20	1.25	30	0.67	560
0800-9149	-0.01	1.4	5.08	25	1200	1	-2	1.15	1.4	13	65	20	2.8	10	1.11	30	0.61	1835
0800-9250	0.01	0.8	5.47	20	1130	1	-2	0.78	-0.5	9	62	16	2.95	10	1.17	30	0.64	333
0899-9149	0.02	0.5	5.44	16	990	1	-2	1.15	-0.5	13	64	10	2.9	10	1.11	30	0.65	1005
0899-9199	0.01	-0.5	5.28	16	1120	1	-2	1.18	-0.5	9	62	10	2.56	10	1.14	30	0.65	426
0901-9298	0.02	-0.5	5.63	23	1030	1.1	-2	0.99	-0.5	7	65	19	3.65	10	1.23	30	0.7	301
0902-9249	0.01	-0.5	5.59	16	1210	1	-2	0.85	-0.5	10	63	15	3.01	10	1.2	30	0.66	453
0998-9203	0.01	-0.5	5.17	16	1010	1	-2	0.86	-0.5	7	64	14	2.57	10	1.13	20	0.62	323
1002-9152	0.01	-0.5	5.33	20	1040	1.1	-2	0.97	-0.5	14	68	10	3.1	10	1.2	40	0.64	985
1002-9252	0.04	-0.5	6.12	17	1360	1.2	-2	1.14	1.2	21	70	27	3.58	20	1.34	30	0.76	1910
1101-9252	0.02	-0.5	6.19	7	1690	1.4	-2	1.13	0.6	13	70	46	3.19	10	1.38	40	0.79	1145
1102-9198	0.03	-0.5	6.22	17	1990	1.4	-2	1.1	0.5	11	69	40	3.18	10	1.43	30	0.8	1120
1131-9384	0.01	1	6.2	17	1870	1.2	-2	1.02	1.8	13	72	37	2.93	10	1.14	40	0.69	1445

SAMPLE	Mo (ppm)	Na (%)	Ni (ppm)	P (ppm)	Pb (ppm)	S (%)	Sb (ppm)	Sc (ppm)	Sr (ppm)	Th (ppm)	Ti (%)	Tl (ppm)	U (ppm)	V (ppm)	W (ppm)	Zn (ppm)
E009375	1	1.04	30	1250	65	0.1	-5	14	180	-20	0.38	-10	10	119	-10	575
E009376	-1	1.08	24	1290	23	0.08	-5	13	187	-20	0.4	-10	-10	111	-10	255
E009377	1	1	28	1230	29	0.09	-5	13	186	-20	0.39	-10	10	118	-10	329
E009378	1	1.1	26	1030	73	0.05	-5	12	197	-20	0.42	-10	10	112	-10	325
E009379	-1	1.04	21	1060	34	0.06	-5	11	179	-20	0.4	-10	-10	106	-10	190
E009380	-1	1.09	22	990	23	0.07	-5	11	189	-20	0.41	-10	-10	106	-10	154
E009381	-1	1.18	21	800	21	0.03	-5	11	194	-20	0.42	-10	10	121	-10	92
E009382	-1	1.13	21	790	18	0.02	-5	11	185	-20	0.41	-10	-10	114	-10	90
E009383	-1	1.18	23	910	18	0.02	-5	12	195	-20	0.43	-10	10	119	-10	102
E009384	-1	1.18	20	830	17	0.03	-5	11	193	-20	0.38	-10	-10	114	-10	94
E009385	-1	1.06	22	1090	19	0.06	-5	11	177	-20	0.39	-10	-10	118	-10	93
E009386	-1	1.08	20	850	17	0.04	-5	11	176	-20	0.37	-10	-10	108	-10	85
0695-9149	-1	1.14	16	880	26	0.05	-5	10	198	20	0.44	-10	-10	104	-10	108
0699-9202	1	1.13	21	690	24	0.06	-5	11	192	-20	0.39	-10	-10	112	-10	144
0798-9202	1	1.07	20	800	28	0.02	-5	11	167	20	0.39	-10	-10	117	-10	129
0800-9149	1	1.01	25	860	35	0.06	-5	11	173	-20	0.36	-10	-10	103	-10	164
0800-9250	1	0.99	20	1090	28	0.05	-5	10	157	-20	0.35	-10	-10	105	-10	92
0899-9149	1	1.17	17	780	33	0.04	-5	11	191	-20	0.39	-10	-10	105	-10	95
0899-9199	1	1.12	19	770	30	0.04	-5	10	187	-20	0.39	-10	-10	104	-10	99
0901-9298	-1	1.14	21	850	22	0.02	-5	10	181	-20	0.4	-10	10	109	-10	81
0902-9249	1	1.07	20	960	24	0.05	-5	11	170	-20	0.36	-10	-10	106	-10	83
0998-9203	1	1.04	18	940	18	0.05	-5	10	160	-20	0.36	-10	-10	103	-10	83
1002-9152	2	1.08	19	860	23	0.02	-5	10	172	-20	0.42	-10	-10	108	-10	81
1002-9252	-1	1.02	28	950	22	0.05	-5	12	183	-20	0.36	-10	-10	113	-10	118
1101-9252	-1	1.19	32	850	22	0.04	-5	12	196	-20	0.4	-10	10	117	-10	115
1102-9198	1	1.13	30	940	20	0.04	-5	12	188	-20	0.38	-10	-10	119	-10	119
1131-9384	1	1	31	1030	24	0.07	-5	12	183	-20	0.4	-10	-10	110	-10	153

APPENDIX 6

STATEMENT OF QUALIFICATIONS

Al McOnie

I, Alan McOnie of 694 SH2, RD1, Katikati, New Zealand
DO HEREBY CERTIFY:

THAT, I am a VP Exploration and Qualified Person with Alexco Resource Corp., 1150-200 Granville Street, Vancouver, BC, V6C 1S4.

THAT, I have practiced my profession with various mining companies in Canada, New Zealand, Australia, United States, Mexico, and China for over 36 years.

THAT, I am graduate in geology holding a BSc (Hons) from the University of Otago, New Zealand and a MSc from the University of Toronto, Canada.

THAT, I am a member of the Society of Economic Geologists.

THAT, I am a Fellow of the Australasian Institute of Mining and Metallurgy.

THAT, this report is based on work which I personally managed during the year 2012.

THAT, I have no interest in the property described herein, nor do I expect to receive any such interest.

DATED at Elsa, Yukon this 26h day of May, 2013.

Al McOnie